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pathogens causing NAUTI. The web-based application was used to record data of investigators from urology departments participating in the study every year. Each center entered inpatient data on a single day in the study periods. The point prevalence data on nosocomial urinary tract infection was used to find differences among Asian geographic regions.
A total of 659 patients, 436 males (66.2 %) and 223 (33.8 %) females, were diagnosed with urinary tract infection during the study period. Mean age was 54.9 ± 19.3. Cystitis and pyelonephritis were the most frequent clinical diagnoses representing 18.4 and 15.0 % respectively. *Echerichia coli* was found to be the most frequent uropathogen (171 of 659 isolates) (25.9 %). Cephalosporins were preferred in 34.4 % of cases followed by fluoroquinolones (24.1 %), aminoglycosides (16.8 %), penicillins (7.1 %) and carbapenems (6.5 %). Resistance rates of fluoroquinolones against proven bacterium were relatively high (ciprofloxacin 54.9%, levofloxacin 39.0%). Resistance rates of cephalosporins were more than 42% (42.5 ~ 54.7%). Amikacin and imipenem were maintaining universal resistant patterns (24.9% and 11.3% respectively). Resistance to almost pathogens was lowest in Middle East Asia.
The resistance rates of most of the uropathogens against the antibiotics tested show variation by region in Asia. Almost Asian countries have high resistance rate in broad-spectrum antibiotics inevitably as increasing antibiotic usage. Knowledge of regional and local resistance data and prudent use of antibiotics are necessary to optimize antibiotic therapy in urological patients with NAUTI.

SP 9-3

PREVENTION AND CONTROL OF CATHETER ASSOCIATED URINARY TRACT INFECTION

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Catheter associated Urinary Tract infections are the most common nosocomial infections worldwide. While they are associated with morbidity and mortality especially when urinary tract obstruction occurs, more importantly, they are a major reservoir for antimicrobial resistant pathogens. Several approaches have been attempted to prevent and control CAUTI. These have been driven by a scientific understanding of the pathogenesis of the disease but have been hampered by the inability to deal with the biofilm which develops rapidly once the catheter has been inserted. There has been a renewed interest in biomaterials but the best material which can prevent CAUTI in clinical situations has yet to be found. In the interim, the most successful approaches have been those focusing on process measures including a number of reminder systems which ensure closed drainage and reduced duration of catheterization.

SYMPOSIUM 10 (SP 10)

VACCINE PREVENTABLE DISEASES

SP 10-1

STREPTOCOCCUS PNEUMONIAE

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The impact of the pneumococcal 7-valent conjugated vaccine (PCV7) on reduction of invasive pneumococcal disease (IPD) community-acquired pneumonia (CAP) and acute otitis media (AOM) in children <5 years old has been reported in various studies. These reductions varied in different parts of the world, partially due to different endpoints definitions. IPD cases of the serotypes included in PCV7 declined by more than 90% in the United States. However, in other countries the reduction was only moderate. A significant reduction in the number of primary care visits and hospitalizations due to CAP has been reported from the US. Antibiotic resistant *S. pneumoniae* strains were reported to have decreased significantly in IPD. In addition, antibiotic use for AOM has dropped significantly.
In countries which introduced the extended 13-valent conjugated vaccine (PCV13) into the national immunization programs an additional significant reduction in all pneumococcal related diseases such as IPD were demonstrated. Moreover, dramatic reductions of 50 to 72% in CAP rates were observed after the introduction of PCV13. AOM cases declined significantly by 60% and pneumococcal AOM by almost 80% with the near elimination of serotypes included in the PCV13. Indirect protection of the PCVs was also observed through significant reduction of IPD cases in person >65 years of age. Finally, significant reduction rates in antibiotic resistant *S. pneumoniae* were observed after PCV13 introduction.
As a consequence of PCV13 introduction and its impact, treatment recommendations for pneumococcal related diseases have been changed due to reduction in the prevalence of these diseases as well as the reduction in antibiotic resistance rates.

SP 10-2

IMMUNIZATION ACROSS THE LIFESPAN: ADULT VACCINATIONS

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The world's population is ageing with life expectancy increasing in most countries globally. Estimated life expectancy at birth in 2014 in Taiwan is approximately 80 years. Taiwan's NDC projects that the percentage of people ≥65 will increase from ~12.5% in 2015 to ~40.6%, with median age increasing from ~40 years to ~58.6 years. An ageing society will require its population to remain healthy longer to decrease the burden of illness and remain in the workforce to maintain self-sufficiency. As a result, preventing disease has become a higher priority for governments and the public. This includes reducing the burden of illness due to infectious diseases through immunizations. Increasingly, governments and healthcare providers have recognized the importance of immunizations in preventing diseases such as influenza, pneumococcal disease, herpes zoster, pertussis and others that have a higher incidence as people age and their natural immunity wanes. Policy makers are recommending vaccines in the adult population and adding coverage to their National Immunization Programs. In addition, to expand vaccination opportunities, vaccine providers in many countries now include other health professionals, such as pharmacists, who are licensed to vaccinate eligible adults. As well, some countries have adult immunization practice standards that apply to all healthcare providers, both vaccinators and non-vaccinators. This presentation will review new developments in the policies and practice of immunizations targeting the adult population.

SP 10-3

TRANSMISSION, OUTCOMES AND VACCINE DEVELOPMENT OF ENTEROVIRUS 71

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Enterovirus 71 was first isolated from cases with encephalitis and meningitis in l969 in California, USA. Thereafter, several small sporadic outbreaks occurred in American, Europe, Japan and Australia. Large epidemic outbreaks with high mortality rates occurred: in Bulgaria in 1975 with 44 deaths, in Hungary in 1978 with 47 deaths, in Malaysia in 1997 with at least 31 deaths, and in Taiwan in 1998 with 78 deaths, recently also in mainland China where hundreds of fatal cases were found each year and also in Vietnam.
The enterovirus 71 (EV71) outbreak in Taiwan in 1998 is very well-known to have caused a lot of HFMD, 405 severe and 78 fatal children cases. There were a lot of questions about this outbreak. Dr. Lu did the seroepidemiology before and after the 1998 EV71 epidemic in Taipei City, the seroconversion rate was estimated to be about 10% in young children. Estimation of the infected children <6 years: 180,000, so severe case rate: 2.2/1000 and fatality rate: 0.44/1000, about one in two thousand. Among a cohort of 81 children, Lu et al found that the annual EV71 seroconversion rates (3 to 4%) between 1994 and 1997 were significantly lower than the rate (7 to 11%) before 1994. It is likely that there was lower incidence of EV71 infection between 1994 and 1997 and accumulation of susceptible hosts over the threshold density might have triggered the 1998 outbreak.
From seroepidemiological study, we found the most important places for children EV71 transmission to be households and daycare centers/kindergartens. We did a prospective family cohort study of EV71 household transmission. The overall enterovirus 71 transmission rate of household contacts was 52% (176/339): 84% (70/83) for siblings, 83% (19/23) for cousins, 41% (72/175) for parents, 28% (10/36) for grandparents and 26% (5/19) for uncles/aunts. Among 87 infected adults, 53% (46/87) were asymptomatic, 39% (34/